

The *Malaconothrus* species from South Africa and Lesotho (Acari: Oribatida: Malaconothridae)

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Abstract — Four new species of the genus *Malaconothrus* Berlese 1916 from South Africa and Lesotho are described (*Malaconothrus minimus* sp. nov., *Malaconothrus longidorsus* sp. nov., *Malaconothrus engelbrechti* sp. nov. and *Malaconothrus stigmatus* sp. nov.) and a description of the South African representatives of the species *Malaconothrus indifferens* Hammer 1966 is given.

Key words — Acari, Oribatida, *Malaconothrus*, new species, South Africa, Lesotho.

Introduction

The family Malaconothridae used to be included in the Crotonioidea Thorell 1876, along with the families Nothridae and Camisiidae. The first in-depth study of Malaconothridae was done by Knulle (1957) when he published a detailed morphological and phylogenetical work. Weigmann (1996, 1997) analysed the systematic and phylogenetic position of “Crotonioidea” and concluded that the correct name for the superfamily should be Malaconothroidea. The family Malaconothridae comprise four genera of which *Malaconothrus* Berlese 1904 and *Trimalaconothrus* Berlese 1916 are globally distributed. The genera *Fossonothrus* Hammer 1962 and *Zeanothrus* Hammer 1966, both with tridactyle tarsi, are so far known only from the southern hemisphere. Weigmann (1997) found three characters of high phylogenetic value to be characteristic of the family Malaconothridae, namely (1) absence of adoral setae, (2) specialised cerotegument, and (3) Traegardh’s organ absent on chelicera. The genus *Malaconothrus* is separated from *Trimalaconothrus*, *Fossonothrus* and *Zeanothrus* by the tridactyle state of the tarsi of these last-mentioned, which is regarded as plesiomorphous in adults (Weigmann 1977).

This is the first report of Malaconothridae from South Africa and deals with the genus *Malaconothrus* of which four new species are described. The only hitherto known *Malaconothrus* species which occurs in South Africa is *M. indifferens* Hammer 1966 (described from New Zealand) and a description of the South African material is given.

Malaconothrus minimus sp. nov. (Figs. 2–13)

Measurement (μm). Body length 312–336 (av. 322), width 156–164 (av. 158).

Color. Yellowish brown.

Prodorsum. Rostrum broadly rounded. Pedotectum I obtuse. All prodorsal setae thin and smooth. Relative lengths and mutual distances of prodorsal setae as follows: $le \approx in > ro > ex$; $2 \times ex = ro$; $2 \times ro = le$ and in ; $ro < (ro-ro)$; $le \approx (le-le)$; $in > (in-in)$; $ex < (ex-ex)$. Integument of prodorsum with dense punctation, cerotegument with coarse refracting granules.

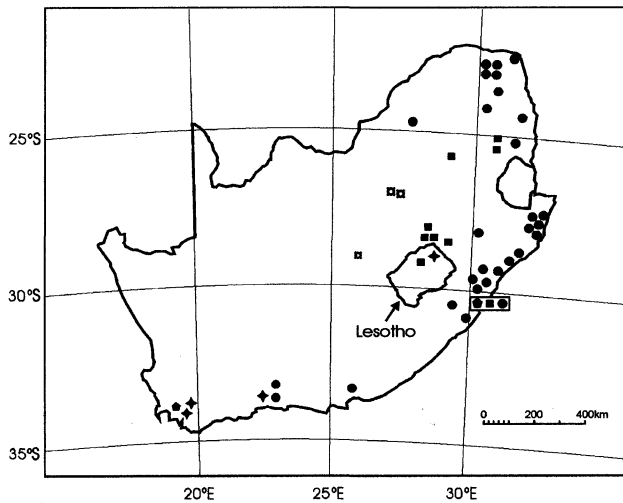
Notogaster. Shield-shaped; anterior margin of notogaster almost straight; lateral sides gradually narrowing posteriorly. All notogastral setae thin and smooth. Lateral part with some faint lines, the first one running inside of setae c_2 and cp to outside of seta d_2 , the second one running inside of seta d_2 to outside of seta e_2 and the third one connecting seta e_2 , f_2 , h_3 and h_2 with a short extension. Seta d_2 situated near lateral margin and f_2 and h_2 situated on lateral margin. Relative lengths and mutual distances of notogastral setae as follows: $e_2 > h_1 > c_1 \approx cp \approx d_1 \approx d_2 \approx e_1 \approx h_2 > c_3 \approx f_2 \approx h_3 \approx ps_2 \approx ps_3 > ps_1 > c_2$; $(e_1-e_1) > (d_1-d_1) \approx (h_1-h_1) > (c_1-c_1)$; $3 \times (c_2-c_3) \approx (c_1-c_2)$; $(e_1-h_1) = (h_1-h_1)$. Lyrifissure ip situated very close to notogastral margin. Cerotegumental granules smaller and sparser than those on prodorsum.

Ventral side. Anogenital chaetotaxy 4-0-1-3. Genital plate with 4 thin and smooth setae; distances between them as follows: $(g_1-g_2) < (g_2-g_3) > (g_3-g_4)$; $(g_3-g_4) \approx 2 \times (g_1-g_2)$. Anal plate with one minute seta; anal seta situated at mid-distance between adanal setae ad_2 and ad_3 . Adanal plate with 3 long

Table 1. Localities of *Malaconothrus* in South Africa and Lesotho.

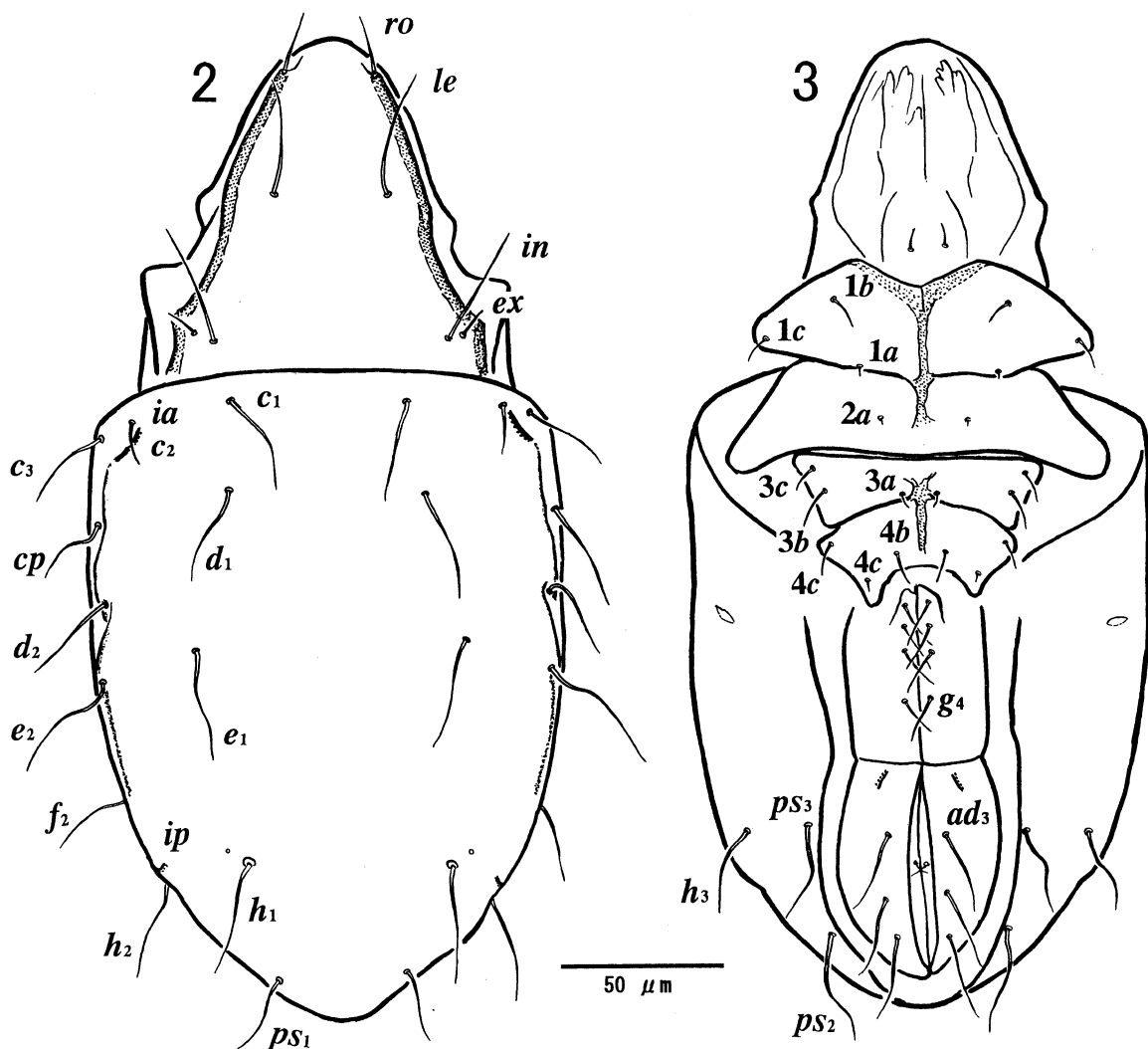
No. ¹	Distribution ²	Locus ³	Collecting date	Collector	Habitat
<i>Malaconothrus minimus</i> sp.nov.					
3259	Kogelbaai (WC)	3418 Bb	23 Feb 1983	B.S. Rubidge	Humic, moist, sandy soil
<i>Malaconothrus longidorsus</i> sp.nov.					
3268	Sir Lowry's Pass (WC)	3418 Bb	23 Feb 1982	B.S. Rubidge	Moist soil with plant debris.
3259	Kogelbaai (WC)	3418 Bb	23 Feb 1983	B.S. Rubidge	Humic, moist, sandy soil
3289	George (WC)	3322 Cd	10 Mar 1983	L. Coetzee	Moist humic soil in indigenous forest
3653	Mahibamatso (Lesotho)	2928 Ab	8 April 1989	D.J. Kok	Soil with grass and moss.
<i>Malaconothrus engelbrechti</i> sp.nov.					
3930	Bloemfontein (FS)	2926 Aa	16 May 1999	L. Coetzee	Soil in indigenous garden
1642	Parys (FS)	2627 Cd	20 Oct 1981	J.J.B. Dreyer	Soil with grass cover
1643	Parys (FS)	2627 Cd	20 Oct 1981	J.J. B. Dreyer	Dry soil with some plant cover
<i>Malaconothrus stigmatus</i> sp.nov.					
1688	George (WC)	3322 Ab	31 Dec 1981	C.M.Engelbrecht	Humic soil in indigenous forest
1690	George (WC)	3322 Ab	31 Dec 1981	C.M.Engelbrecht	Humic soil in indigenous forest
1884	Glenco (KZN)	2830 Aa	27 Jan 1982	C.M.Engelbrecht	Soil and plant debris under Acacia sp.
1930	Ballito (KZN)	2931 Ca	9 Feb 1982	C.M.Engelbrecht	Moist plant debris
1965	Hibberdeen (KZN)	3030 Da	10 Feb 1982	C.M.Engelbrecht	Dense indigenous shrubs near beach.
1967	Port Shepstone (KZN)	3030 Cb	10 Feb 1982	C.M.Engelbrecht	Moist soil with plant debris
1986	Kokstad (EC)	3029 Db	10 Feb 1982	C.M.Engelbrecht	Moist soil with plant debris
2037	Inchanga (KZN)	2930 Da	30 Mar 1982	J. Watson	Moist soil with plant debris
2039	Inchanga (KZN)	2930 Da	30 Mar 1982	J. Watson	Under trees with ferns
2076	Port Elizabeth (EC)	3325 Dc	26 May 1982	C.M.Engelbrecht	Moist soil under dense indigenous bush
2100	Winklespruit (KZN)	3030 Bb	3 July 1982	C.M.Engelbrecht	Moist soil with plant debris
2102	Winklespruit (KZN)	3030 Bb	3 July 1982	C.M.Engelbrecht	Moist soil near beach
2106	Blythedale (KZN)	2931 Ad	5 July 1982	C.M.Engelbrecht	Moist soil and decomposed plant debris
2127	Levubu (LP)	2330 Aa	3 Aug 1982	C.M.Engelbrecht	Dryish soil with plant debris
2128	Levubu (LP)	2330 Aa	3 Aug 1982	C.M.Engelbrecht	Dryish soil with plant debris
2132	Sibasa (LP)	2230 Cd	3 Aug 1982	C.M.Engelbrecht	Slightly moist soil with plant debris
2180	Louis Trichardt (LP)	2230 Cc	4 Aug 1982	C.M.Engelbrecht	Dryish soil with plant debris
2344	Lenyengee (LP)	2330 Da	5 Aug 1982	C.M.Engelbrecht	Dryish soil with plant debris
2451	The Downs (LP)	2430 Aa	31 Aug 1982	C.M.Engelbrecht	
3167	Mabula (LP)	2427 Dc	3 Sept 1982	C.M.Engelbrecht	Moist soil with plant debris
3302	Vernon Crookes NR (KZN)	3030 Bc	31 Mar 1983	D.J. Kok	Soil and decomposed plant debris
3615	Nelspruit (MP)	2531 Ac	28 Feb 1987	R. Earl	Soil with plant debris
3638	Pafuri (LP)	2231 Ad	3 Mar 1988	R. Earl	Soil from riverine bush
3666	Skukuza (MP)	2431 Dc		E. Visagie	Soil with plant debris
3698	St. Lucia (KZN)	2832 Ad	8 Nov 1993	J.P. Eksteen	Coastal dune forest
3699	St. Lucia (KZN)	2832 Ad	8 Nov 1993	J.P. Eksteen	Edge of Pine plantation
3701	St. Lucia (KZN)	2832 Ad	8 Nov 1993	J.P. Eksteen	Edge of Pine plantation
3702	St. Lucia (KZN)	2832 Ad	8 Nov 1993	J.P. Eksteen	Edge of Pine plantation
3711	St. Lucia (KZN)	2832 Ba	8 Nov 1993	J.P. Eksteen	Edge of Pine plantation
3713	St. Lucia (KZN)	2832 Ba	8 Nov 1993	J.P. Eksteen	Edge of Pine plantation
3714	St. Lucia (KZN)	2832 Ba	8 Nov 1993	J.P. Eksteen	Edge of Pine plantation
3715	St. Lucia (KZN)	2832 Ba	8 Nov 1993	J.P. Eksteen	Edge of Pine plantation
3720	St. Lucia (KZN)	2832 Ba	8 Nov 1993	J.P. Eksteen	Open grassland at coastal dune forest
3721	St. Lucia (KZN)	2832 Ba	8 Nov 1993	J.P. Eksteen	Open grassland at coastal dune forest
3722	St. Lucia (KZN)	2832 Ba	8 Nov 1993	J.P. Eksteen	Open grassland at coastal dune forest
3723	St. Lucia (KZN)	2832 Ba	8 Nov 1993	J.P. Eksteen	Open grassland at coastal dune forest
3726	St. Lucia (KZN)	2832 Ba	8 Nov 1993	J.P. Eksteen	Pine plantation
3727	St. Lucia (KZN)	2832 Ba	8 Nov 1993	J.P. Eksteen	Pine plantation
3729	Cape Vidal (KZN)	2832 Ba	9 Nov. 1993	J.P. Eksteen	Indigenous forest
3730	Cape Vidal (KZN)	2832 Ba	9 Nov. 1993	J.P. Eksteen	Indigenous forest
3731	Cape Vidal (KZN)	2832 Ba	9 Nov. 1993	J.P. Eksteen	Indigenous forest
3736	Cape Vidal (KZN)	2832 Ba	9 Nov. 1993	J.P. Eksteen	Indigenous forest
3740	Cape Vidal (KZN)	2832 Ba	9 Nov. 1993	J.P. Eksteen	Indigenous forest
3745	Cape Vidal (KZN)	2832 Ba	9 Nov. 1993	J.P. Eksteen	Indigenous forest
3746	Cape Vidal (KZN)	2832 Ba	9 Nov. 1993	J.P. Eksteen	Indigenous forest
3749	Cape Vidal (KZN)	2832 Ba	9 Nov. 1993	J.P. Eksteen	Indigenous forest
3750	Dukuduku (KZN)	2832 Ad	10 Nov 1993	J.P. Eksteen	Coastal forest
3751	Dukuduku (KZN)	2832 Ad	10 Nov 1993	J.P. Eksteen	Indigenous riverine forest
3754	Makakatama (KZN)	2832 Ab	10 Nov 1993	J.P. Eksteen	Coastal dune forest
3763	Kwambonambi (KZN)	2832 Ca	11 Nov 1993	J.P. Eksteen	Coastal dune forest
<i>Malaconothrus indifferens</i> Hammer 1966					
2438	Middelburg (MP)	2529 Cd	30 Aug 1982	C.M.Engelbrecht	Moist soil with plant debris
2901	Royal Natal NP (KZN)	2829 Ca	14 Dec 1982	C.M.Engelbrecht	Humic, moist soil
3302	Vernon Crookes NR (KZN)	3030 Bc	31 Mar 1983	D.J. Kok	Humic, moist soil
3451	Golden Gate NP (FS)	2828 Da	18 Mar 1986	C.M.Engelbrecht	Moist plant debris
3456	Golden Gate NP (FS)	2828 Da	18 Mar 1986	C.M.Engelbrecht	Soil and decomposed plant debris
3460	Golden Gate NP (FS)	2828 Da	28 Mar 1986	C.M.Engelbrecht	Moist soil and plant debris
3621	Sabie (MP)	2530 Bb	26 Feb 1987	R. Earl	At stream in indigenous forest
3622	Sabie (MP)	2530 Bb	26 Feb 1987	R. Earl	Near stream in indigenous forest
3654	Maluti plateau (Lesotho)	2928 Ab	8 April 1989	D.J. Kok	Spungy soil with moss and grass

1 Bottle number of specimens in the South African National Museum. Boldfaced are type localities. 2 WC = Western Cape; KZN = Kwazulu-Natal; MP = Mpumalanga Province; FS = Free State; EC = Eastern Cape; LP = Limpopo Province; NR=Nature Reserve; NP=National Park. 3 First four digits represents south latitude and west longitude of the locality (e.g. 3418 means 34° south and 18° west).

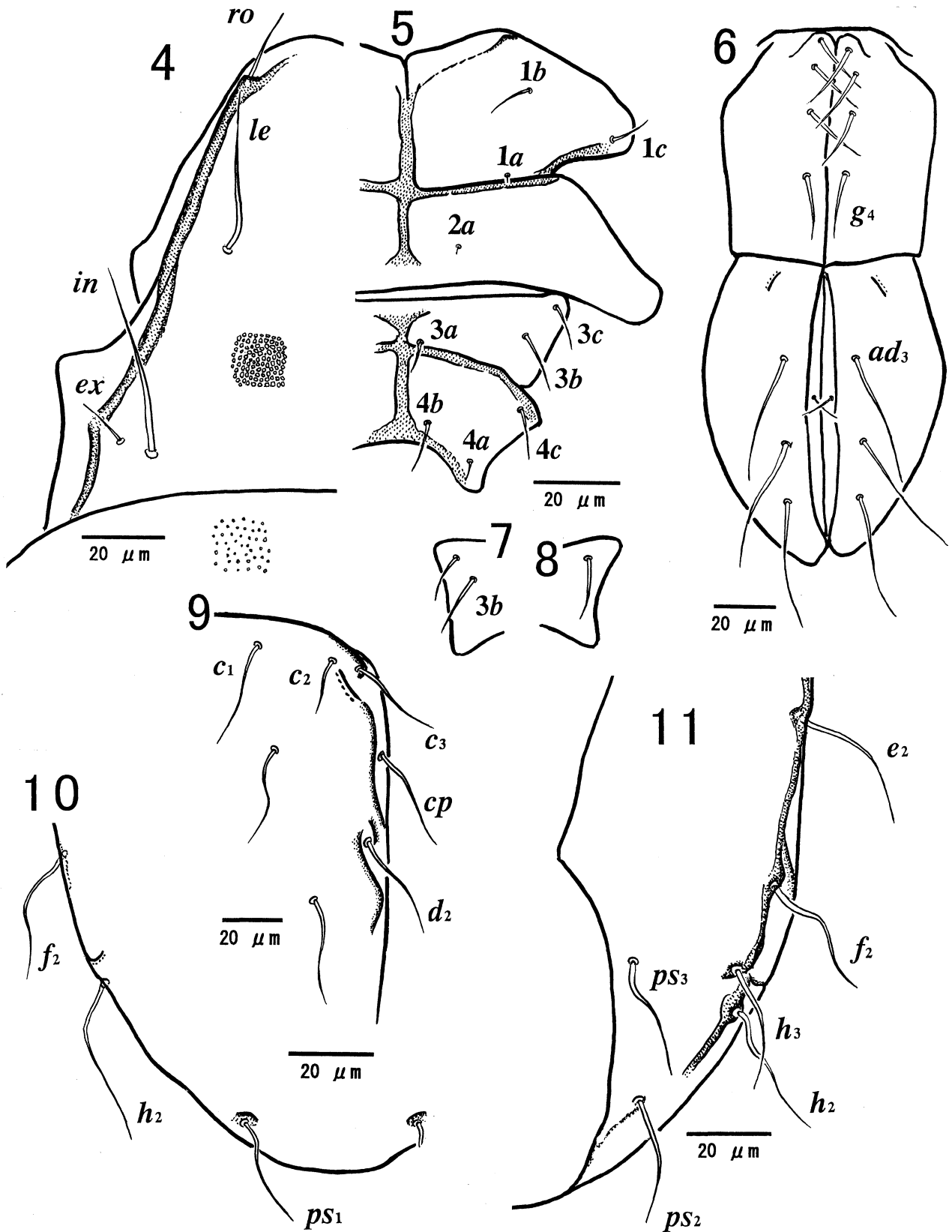


●: *Malaconothrus minimus* sp. nov., +: *Malaconothrus longidorsus* sp. nov.,
 □: *Malaconothrus engelbrechti* sp. nov., ●: *Malaconothrus stigmatus* sp. nov.,
 ■: *Malaconothrus indifferens* Hammer.

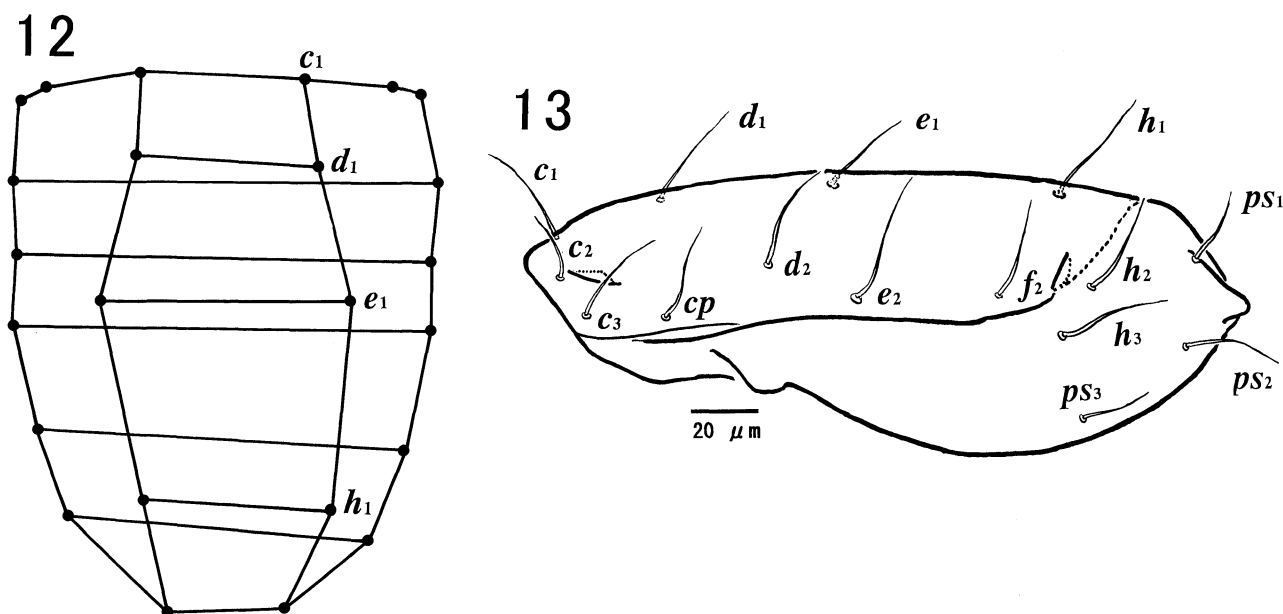
Fig. 1. Map of localities of *Malaconothrus* in South Africa and Lesotho.



Figs. 2-3. *Malaconothrus minimus* sp. nov. (holotype) — 2, Dorsal view; 3, Ventral view.



Figs. 4–11. *Malaconothrus minimus* sp. nov. (holotype) — 4, Prodorsum; 5, Epimerata I–IV. 6, Genital and anal plates; 7, Variation of epimerata III; 8, Variation of epimerata III; 9, Antero-lateral part of notogaster; 10, Posterior part of notogaster; 11, Posterolateral part of notogaster (ventral view).



Figs. 12–13. *Malaconothrus minimus* sp. nov. (holotype) — 12, Setal station map; 13, Lateral view of notogaster.

setae. Setal formula of epimerata: 3-1-3-3; all epimeral setae smooth, thin and variable in length; 3*b* longest, 1*b*, 1*c*, 3*c*, 4*b* and 4*c* moderately long; 1*a*, 2*a*, 3*a*, 4*a* minute. Epimeres, genital plates and anal plates covered with reflecting granular cerotegument similar to that of the prodorsum.

Material examined. Holotype and 6 paratypes from St.3259. Wet humic sandy soil under ferns. Koeelbaai near Gordonsbaai, Western Cape. 23-II-1983. B. S. Rubidge. The holotype (NMB 3259.16.1) and 3 paratypes (NMB 3259.16.2) will be deposited in the Acarology collection of the National Museum Bloemfontein, South Africa, and 3 paratypes (NSMT-Ac 11706–11708) in the collection of the National Science Museum, Tokyo.

Remarks. This species is very similar to *M. angulatus* Hammer 1958 from Argentina in the shape of notogaster and having 4 genital setae. However, it differs from *M. angulatus* by the distinct difference in size (*M. angulatus* 400 µm and *M. minimus* 322 µm); lamellar setae longer than rostral setae (more or less the same length in *M. angulatus*); lateral displacement of notogastral seta *d*₂ (cf. Hammer 1958 plate VII, fig. 29); notogastral seta (*d*₁–*d*₁), (*e*₁–*e*₁) and (*e*₁–*h*₁) further apart; *ip* situated near lateral margin of notogaster.

***Malaconothrus longidorsus* sp. nov.**
(Figs. 14–22)

Measurement (µm). Body length 408–436 (av. 424), width 188–200 (av. 194).

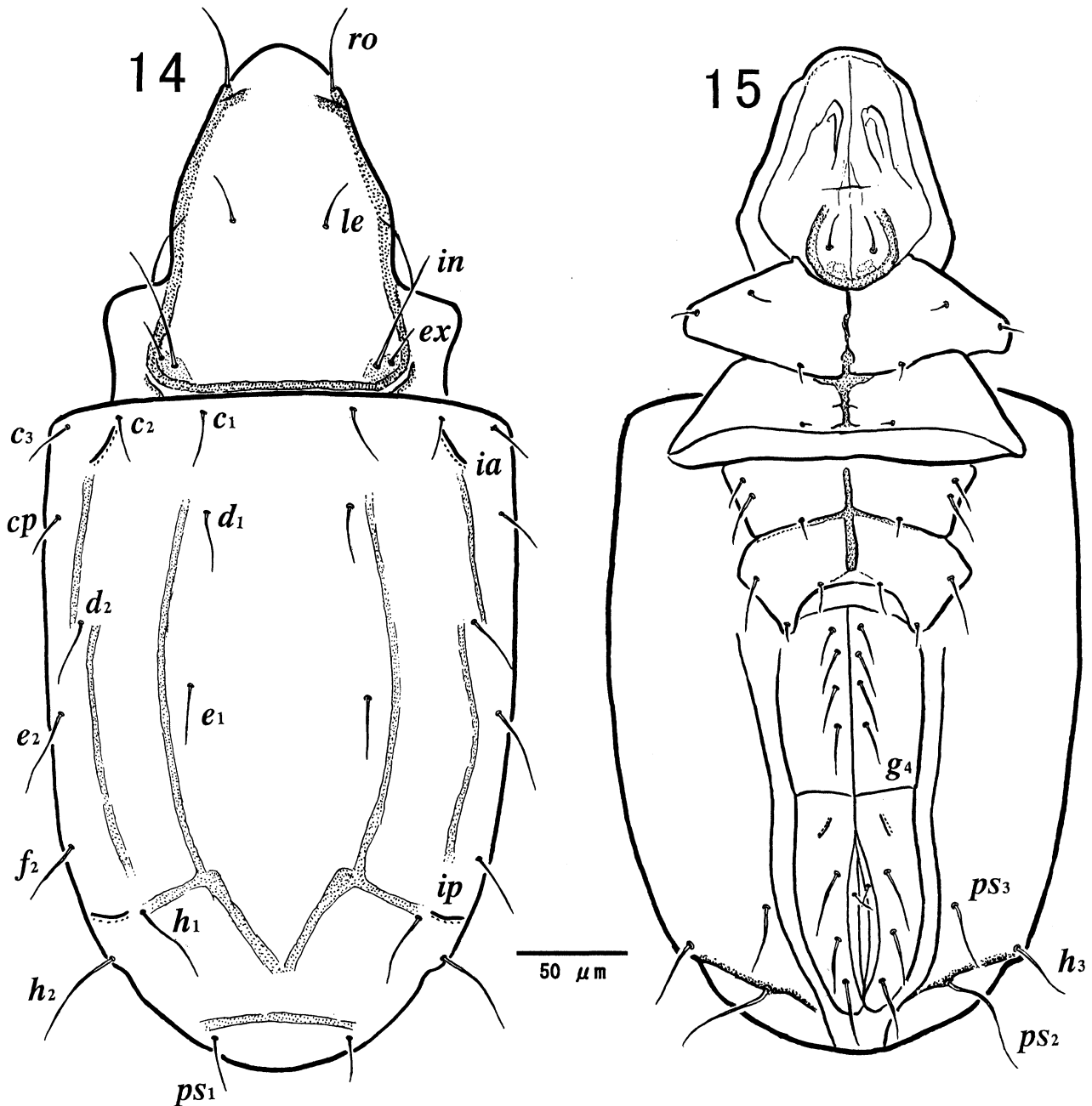
Color. Yellowish brown.

Prodorsum. Rostrum broadly rounded. Pedotectum I rounded. Lamellar ridge inconspicuous and bending inward to form a short transverse ridge just proximally behind

rostral setae. All prodorsal setae thin and smooth. Lamellar seta short. Relative lengths and mutual distances of prodorsal setae as follows: $in > ro > le > ex$; $2 \times ex \approx ro$; $ro < (ro-ro)$; $2 \times le \approx (le-le)$; $in < (in-in)$; $ex < (ex-ex)$. Prodorsum covered with very fine granular cerotegument.

Notogaster. Shield-shaped; anterior margin of notogaster slightly curved; lateral margins gradually narrowing posteriorly. All notogastral setae thin and smooth. Notogastral ridges present (not equally clear on all specimens); one pair of slightly concave medial ridges running from later ally of *d*₁, towards the transverse ridge; one pair of lateral ridges, running from posteriorly of *ia* to laterally of *d*₂, where it is interrupted, and continues medially of *d*₂ to more or less the level of *f*₂; one pair of angular transverse ridges, running from *h*₁ medially towards the end of the medial ridge, where it forms an acute angle and then continues postero-medially; lyrifissure *ip* long, seta *h*₁ situated near the medial end of *ip*; an unpaired, straight, horizontal ridge present between setae *ps*₁–*ps*₁. Relative lengths and mutual distances of notogastral setae as follows: $h_2 \approx ps_2 > h_1 \approx e_2 > d_2 \approx f_2 \approx h_3 \approx ps_3 > c_1 \approx d_1 \approx e_1 \approx ps_1 > c_2 \approx c_3 \approx cp$; $(h_1-h_1) > (e_1-e_1) > (c_1-c_1) > (d_1-d_1)$; $1.7 \times (c_2-c_3) \approx (c_1-c_2)$. There is no distinct surface structure on the notogaster.

Ventral side. Anogenital chaetotaxy 4-0-1-3. Genital plate with 4 thin and smooth setae; setal distances generally as follows: $(g_1-g_2) < (g_2-g_3) < (g_3-g_4)$; many variations in the arrangement of genital setae. Anal plate with one minute seta, situated more or less at mid-distance between adanal setae *ad*₂ to *ad*₃. Adanal plate with 3 long setae. Setal formula of epimerata: 3-1-3-3; all epimeral setae smooth, thin and variable in length; 3*b* and 4*c* longest, 1*b*, 1*c* and 3*c* moderately long and the remaining setae 1*a*, 2*a*, 3*a*, 4*a* and 4*b* minute. In one specimen right side of epimeral setae 3*b* and 3*c* of



Figs. 14–15. *Malaconothrus longidorsus* sp. nov. (holotype) — 14, Dorsal view; 15, Ventral view.

right side in close proximity. Epimeres covered with very fine granular cerotegument, similar to that of the prodorsum.

Material examined. Holotype and 14 paratypes from St. 3268, wet soil covered with grass near stream. Sir Lowrey's Pass, Western Cape. 23-II-1983. B. S. Rubidge. The holotype (NMB 3268.2.1) and 7 paratypes (NMB 3268.2.2) will be deposited in the Acarology collection of the National Museum Bloemfontein, South Africa, and 7 paratypes (NSMT-Ac 11709–11715) in the collection of the National Science Museum, Tokyo.

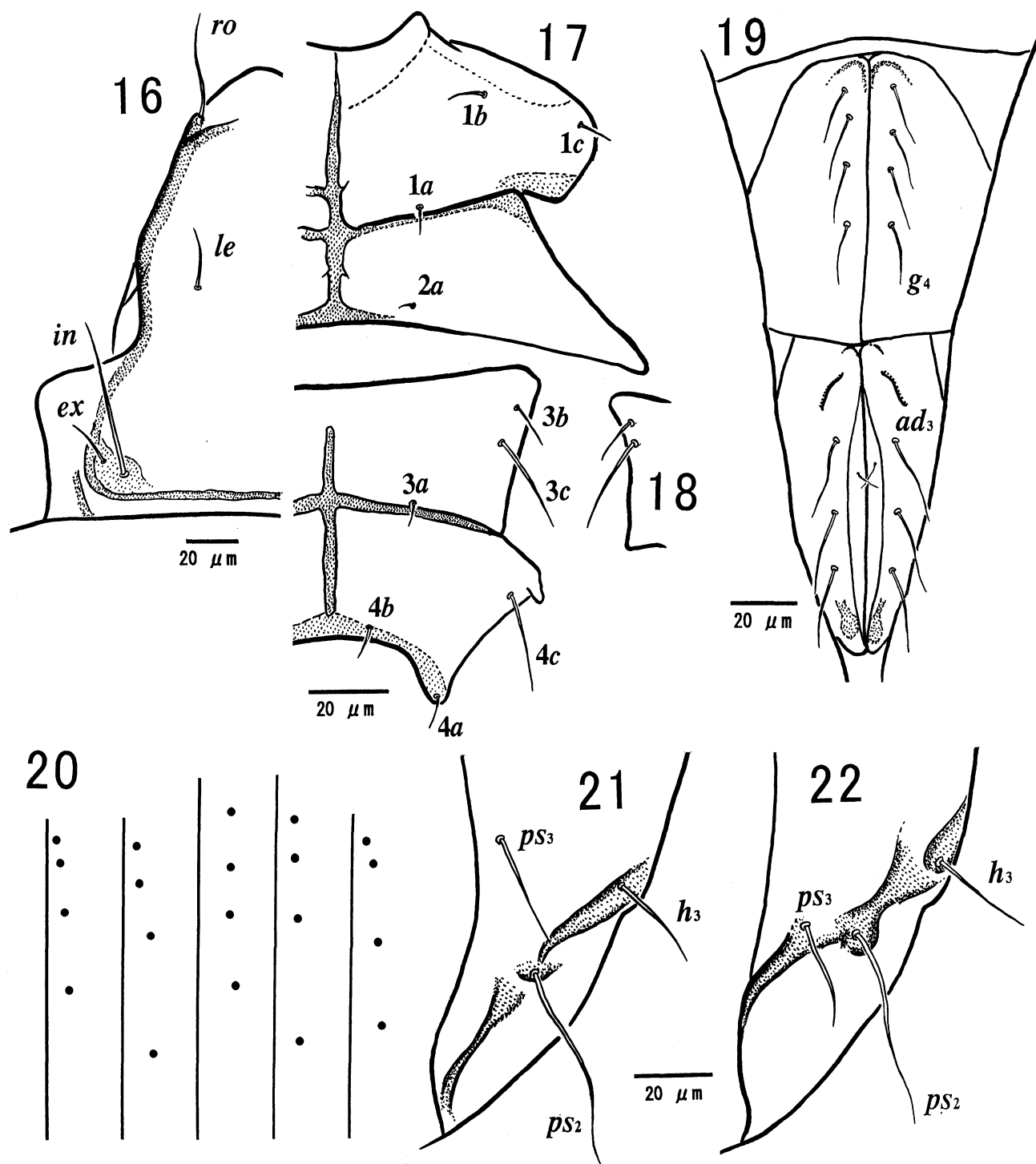
Remarks. This species is very similar to *M. atuelanus*

Hammer 1958 from Argentina because of the presence of dorsal ridges, 4 pairs of genital setae and absence of a complete transverse lamellar ridges proximally of the rostral setae, short lamellarseta, covered with very fine granular cerotegument, having large *ia* and *ip* and inverted W-shaped ridge on notogaster.

***Malaconothrus engelbrechti* sp. nov.**

(Figs. 23–31)

Measurement (μm). Body length 388–480 (av. 427),



Figs. 16–23. *Malaconothrus longidorsus* sp. nov. (holotype) — 16, Prodorsum; 17, Epimerata I–IV. 18: Variation of epimerata III; 19, Genital and anal plates; 20, Variations in the arrangement of genital setae (the longitudinal lines indicate the median slit of genital aperture); 21, Variation of ps_3 ; 22, Variation of ps_3 .

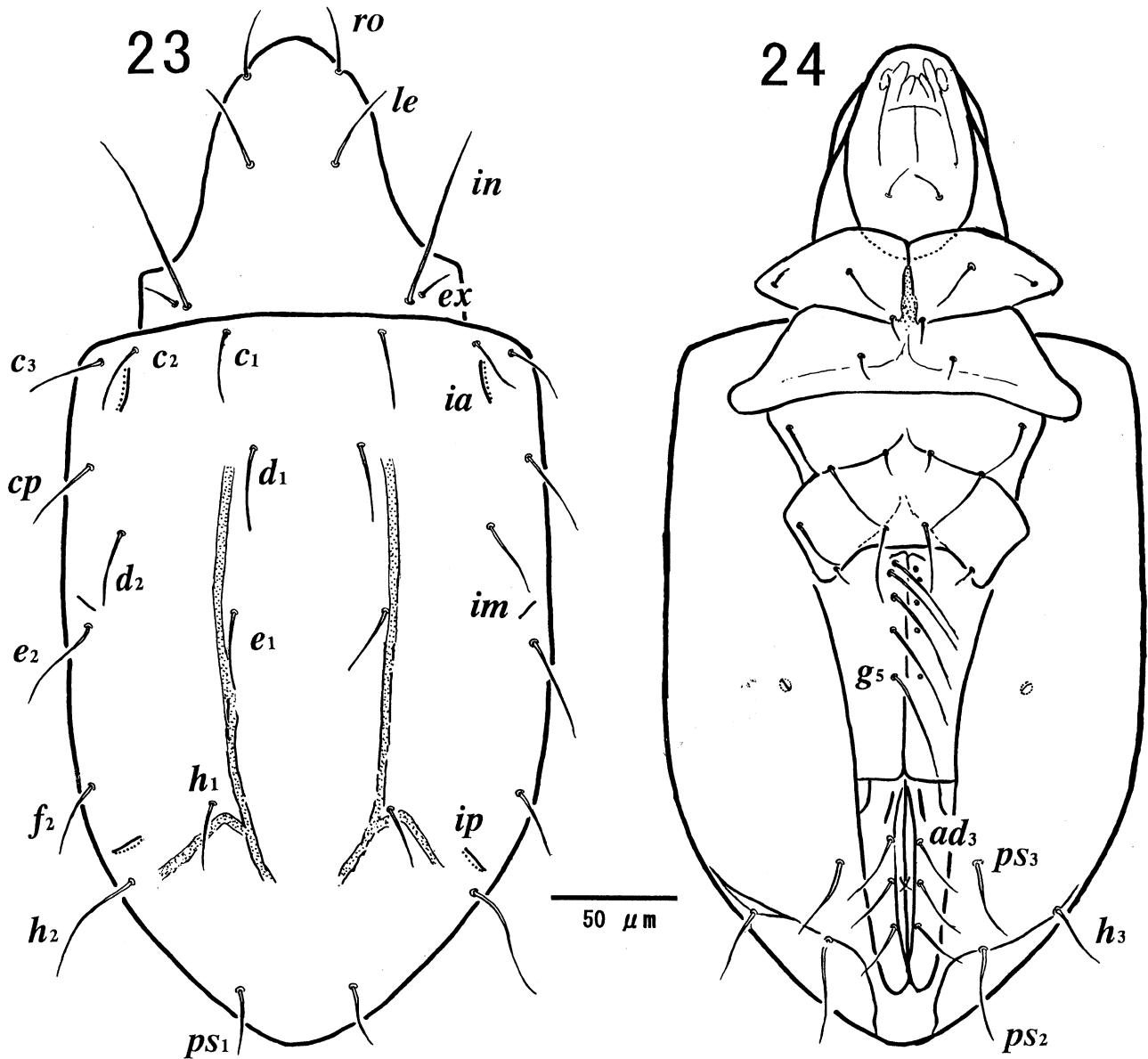
width 192–224 (av. 205).

Color. Yellowish brown.

Prodorsum. Rostrum broadly rounded. Pedotectum I obtuse. Lamellar ridge inconspicuous. All prodorsal setae thin and smooth. Relative lengths and mutual distances of

prodorsal setae as follows: $in > le > ro > ex$; $2 \times le \approx in$; $ro < (ro-ro)$; $le \geq (le-le)$; $in \leq (in-in)$; $ex < (ex-ex)$. Prodorsum covered with very fine dense granular cerotegument.

Notogaster. Shield-shaped; anterior margin of notogaster slightly curved; lateral margins gradually narrowing



Figs. 23–24. *Malaconothrus engelbrehti* sp. nov. (holotype) — 23, Dorsal view; 24, Ventral view.

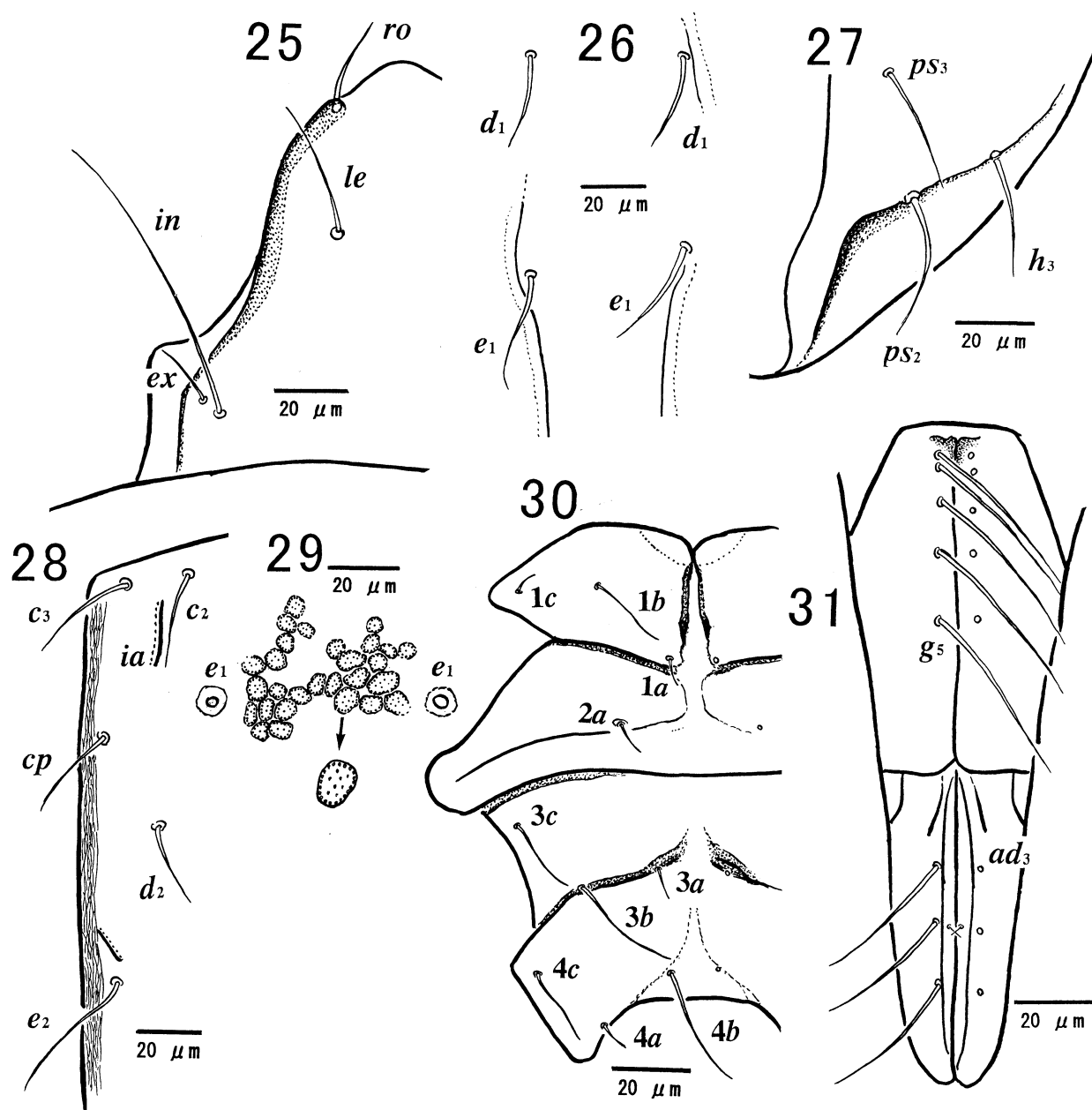
posteriorly; cuticle weak. All notogastral setae thin and smooth. Notogastral ridges present (not equally clear on all specimens); medial ridges running from laterally of d_1 and e_1 towards inside of h_1 with a short posterior extension. Ridges converge posteriorly but are not connected. All notogastral setae smooth. Relative mutual distances of notogastral setae as follows: $(h_1-h_1) > (c_1-c_1) \approx (e_1-e_1) > (d_1-d_1)$; $2.7 \times (c_2-c_3) \approx (c_1-c_2)$. Relative lengths of notogastral setae as follows: $h_2 > e_2 \approx ps_2 > d_1 \approx cp \approx ps_3 > c_1 \approx d_2 \approx e_1 \approx f_2 \approx h_3 > c_2 \approx c_3 \approx h_1 \approx ps_1$.

Ventral side. Anogenital chaetotaxy 5-0-1-3. Genital plate with 5 thin, smooth and long setae; setal distances generally as follows: $(g_1-g_2) < (g_2-g_3) \leq (g_3-g_4) < (g_4-g_5)$; $4 \times (g_1-g_2) \approx (g_4-g_5)$. Anal plate with one minute seta, situated at the level of ad_2 . Adanal plate with 3 setae. Setal formula of

epimerata: 3-1-3-3; all epimeral setae smooth, thin and variable in length; $3b$ and $4b$ longest, $1b$, $3c$ and $4c$ moderately long and the remaining setae $1a$, $1c$, $2a$, $3a$ and $4a$ minute.

Material examined. Holotype and 2 paratypes from St.3930, soil in indigenous garden, Bloemfontein. 16-V-1999. L. Coetzee. The holotype (NMB 3930.19.1) and one paratype (NMB 3930.19.2) will be deposited in the Acarology collection of the National Museum Bloemfontein, South Africa, and one paratype (NSMT-Ac 11716) in the collection of the National Science Museum, Tokyo.

Remarks. In comparison with the *Malaconothrus* species which have 5 pairs of genital setae, the pointed posterior border and sharply converging lateral borders of notogaster corresponds well with the notogastral shape of *M.*



Figs. 25–31. *Malaconothrus engelbrehti* sp. nov. (holotype) — 25, Prodorsum; 26, Notogastral ridge near setae d_1 and e_1 (left side and right side); 27, Posteolateral part of notogaster (ventral view); 28, Anterolateral part of notogaster; 29, Structure of cerotegument on notogaster; 30, Epimerata I–IV; 31, Genital and anal plates.

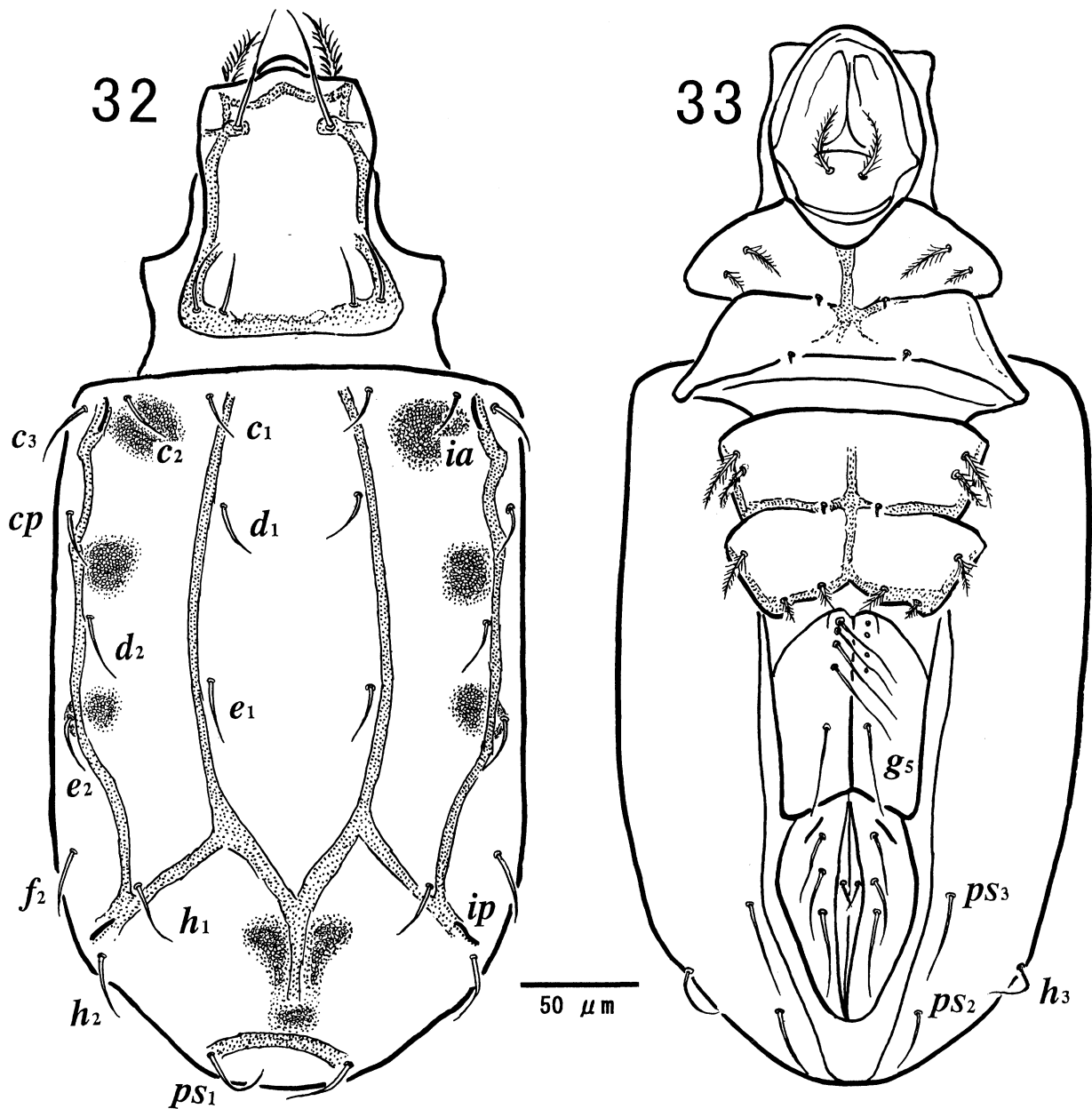
marginatus Yamamoto 1998 from China, but can be distinguished from it by the presence of indistinct notogastral ridges, seta h_1 shorter and in a more medial position, and the rounded pedotectum I in *M. engelbrehti* sp. nov. (pointed, lateral projecting, “Beak-like” in *M. marginatus*).

***Malaconothrus stigmatus* sp. nov.**
(Figs. 32–38)

Measurement (μm). Body length 448–460 (av. 453), width 200–216 (av. 208).

Color. Yellowish brown.

Prodorsum. Rostrum broadly rounded. Pedotectum I obtuse. Conspicuous lamellar and translamellar ridges present. A weak transverse ridge situated just behind interlamellar setae. Rostral seta thick, long and strongly barbed; curved medially; often covered with debris. Lamellar, interlamellar and exobothridial setae smooth. Interlamellar seta slightly shorter than exobothridial seta. Relative lengths and mutual distances of prodorsal setae as follows: $le > ex > ro > in$; $2 \times in = ro$; $ro \leq (ro-ro)$; $le > (le-le)$; $in < (in-in)$; $ex < (ex-ex)$. Integument of prodorsum smooth,



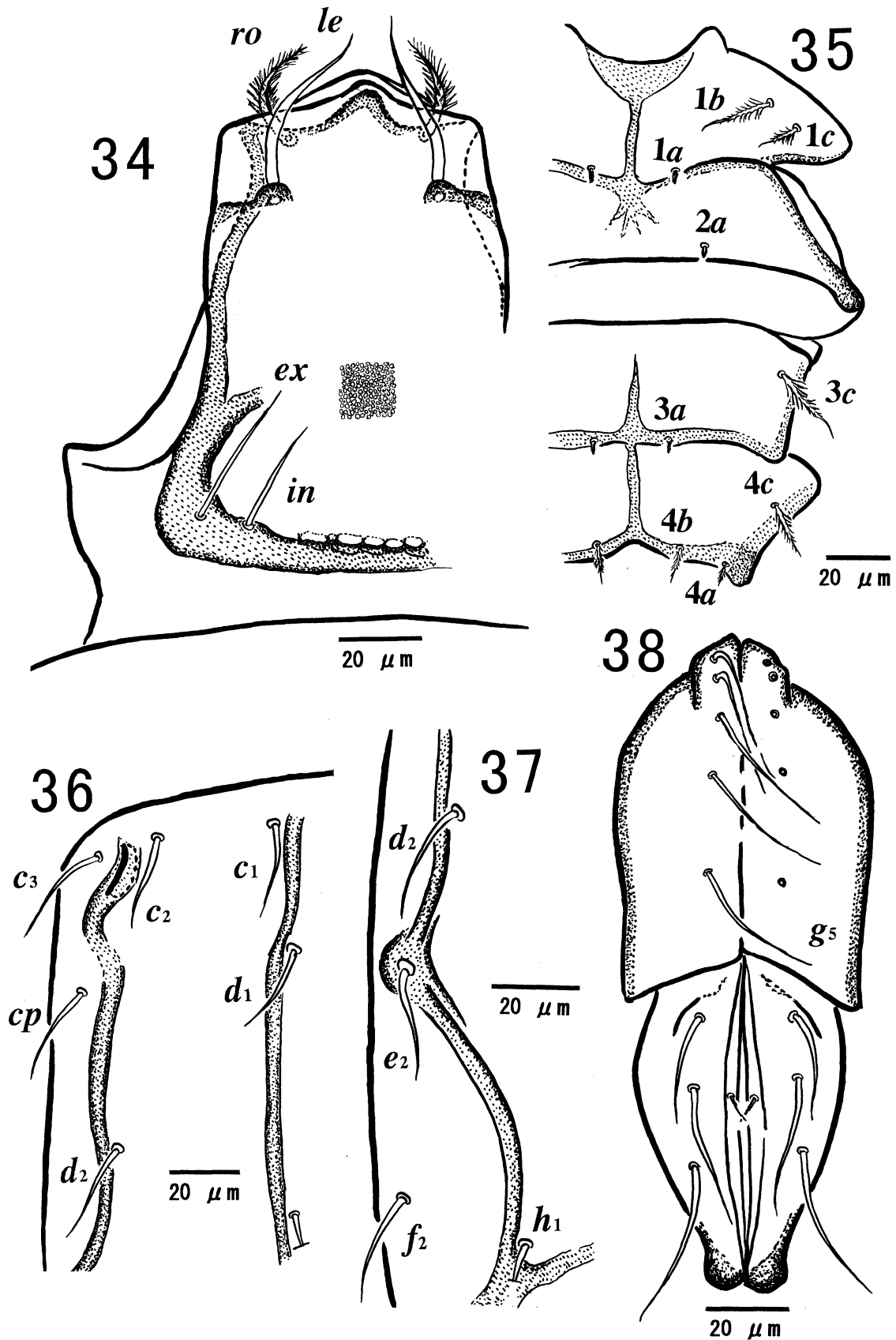
Figs. 32–33. *Malaconothrus stigmatus* sp. nov. (holotype) — 32, Dorsal view; 33, Ventral view.

medially covered by granular cerotegument.

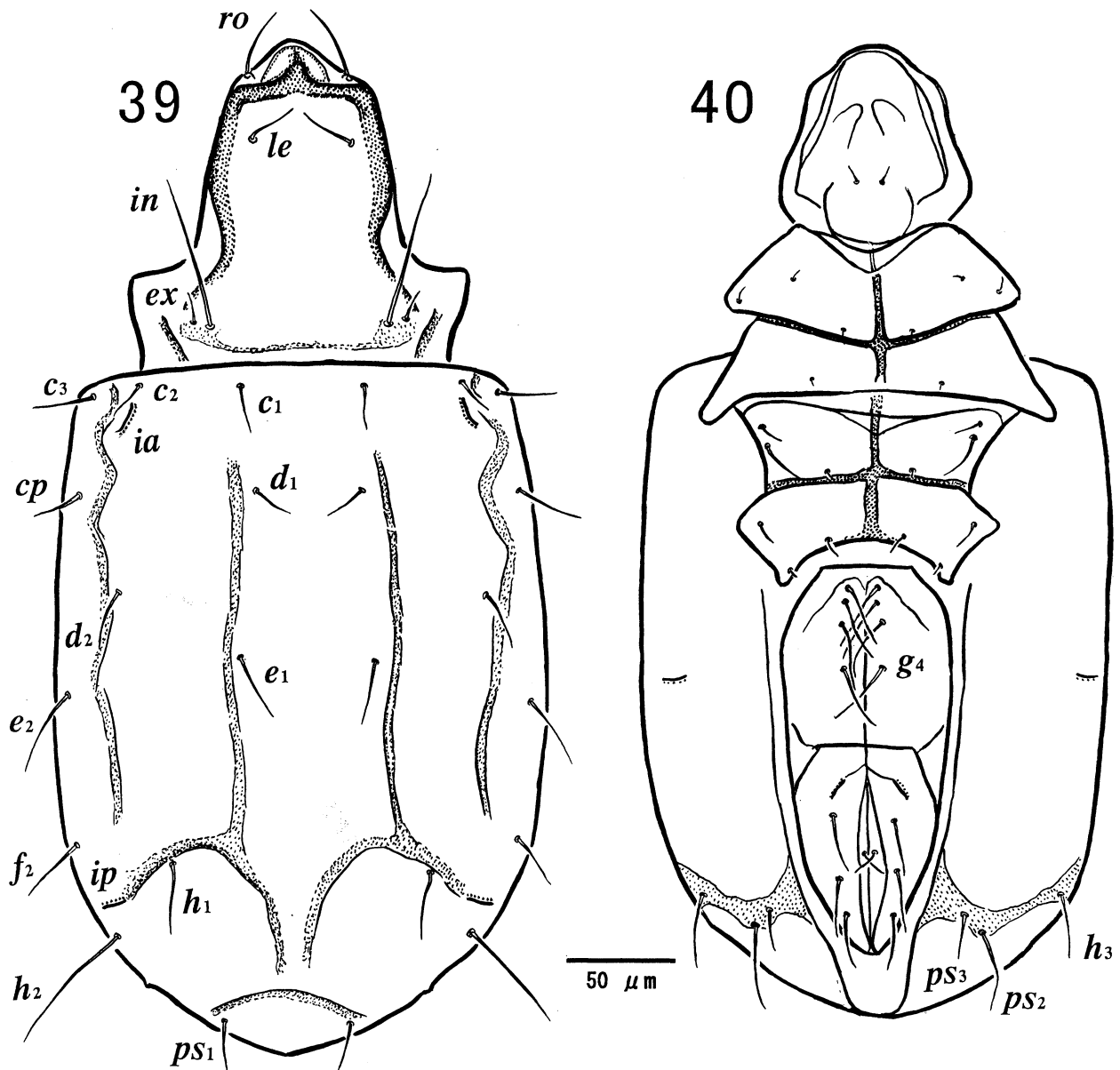
Notogaster. Shield-shaped; anterior margin of notogaster nearly straight; lateral margins parallel. Two pairs of longitudinal ridges present on notogaster (ridges not equally distinct in all specimens); medial pair runs from medially of c_1 , laterally of d_1 and e_1 , splitting more or less at the level of f_2 ; medial extensions converge on the level of h_1 and fuse to form a single medial ridge directed posteriorly, outer extensions join the posterior ends of the lateral ridge just lateral to h_1 and continue as a single latero-posterior ridge on either side; lateral ridge runs medially of c_3 and cp , laterally of d_2 , medially of e_2 , laterally of h_1 ; unpaired horizontal ridge

posteriorly between ps_1 – ps_1 . All notogastral setae short, thick and smooth. Relative mutual distances of notogastral setae as follows: $(h_1-h_1) > (c_1-c_1) \approx (e_1-e_1) > (d_1-d_1)$; $2.1 \times (c_2-c_3) \approx (c_1-c_2)$. Integument smooth, cerotegument consisting of coarse granules present in localized areas.

Ventral side. Anogenital chaetotaxy 5-0-1-3. Genital plate with 5 long and smooth setae; distances between them as follows: $(g_1-g_2) < (g_2-g_3) < (g_3-g_4) < (g_4-g_5)$; $5 \times (g_1-g_2) \approx (g_4-g_5)$. Anal plate with one long seta; anal seta situated at a level slightly posterior to ad_2 . Adanal plate with 3 long setae. Setal formula of epimerata: 3-1-3-3; epimeral setae thick, barbed (except $1a$, $2a$ and $3a$) and variable in length;



Figs. 34–38. *Malaconothrus stigmatus* sp. nov. (holotype) — 34, Prodorsum; 35, Epimerata I–IV (Epimerata III lacked seta 3b); 36, Anterolateral part of notogaster; 37, Seta e_2 and variation of lateral ridge; 38, Genital and anal plates.



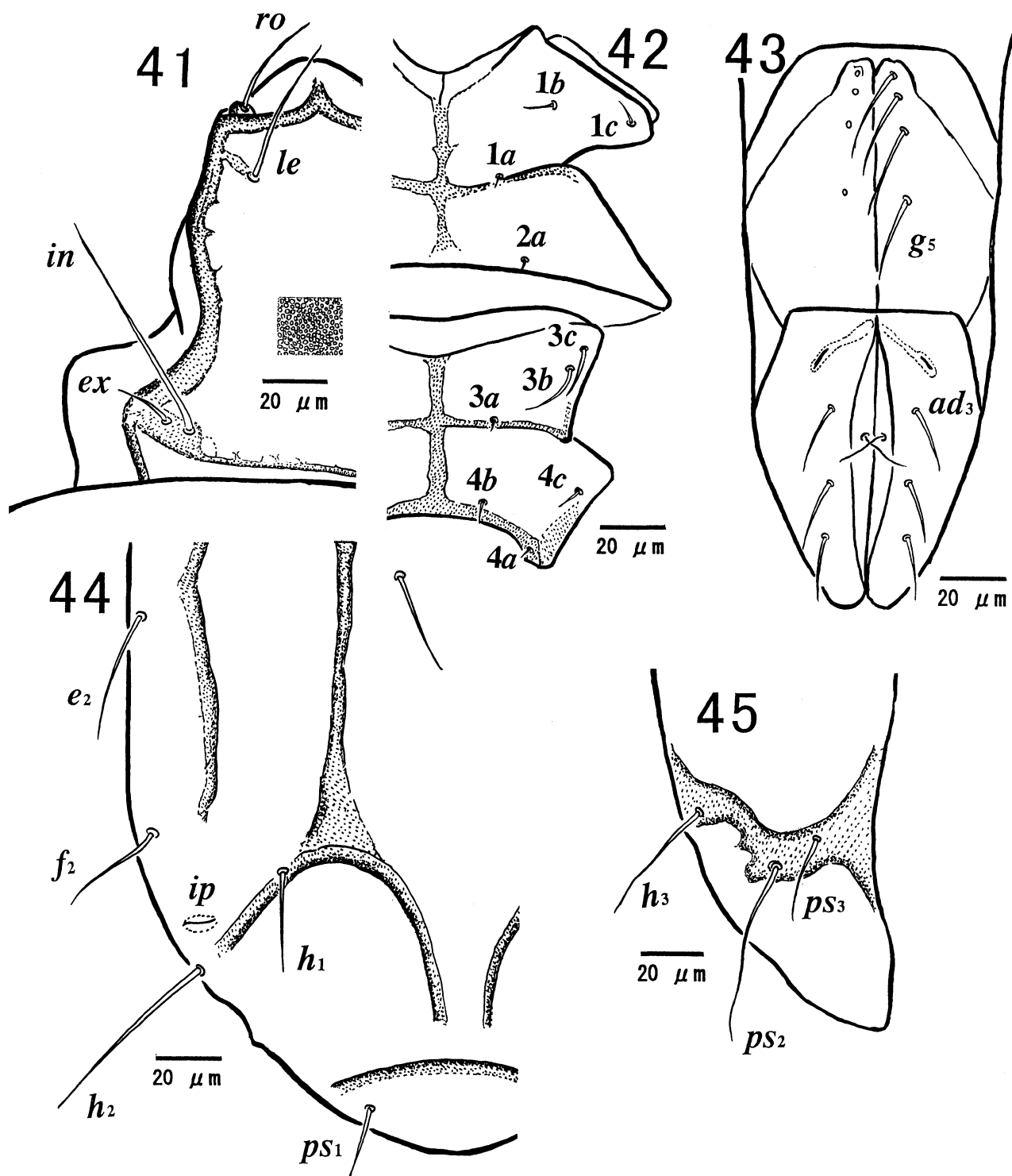
Figs. 39–40. *Malaconothrus indifferens* Hammer 1966. — 39, Dorsal view; 40, Ventral view.

3c longest, 1b, 1c, 3b, 4b and 4c moderately long and the remaining setae 1a, 2a, 3a and 4a short. Seta 3b absent in some specimens. Variation of 9 type specimens as follows (left/right, +: presence, -: absence): +/- in four specimens, -/+ in two specimens, +/- in two specimens and -/- in one specimen. Lateral surfaces of epimerata with granular cerotegument.

Material examined. Holotype and 9 paratypes from St. 1688–7. Humic soil in indigenous forest. Glentana Caravan Park, George, Western Cape. 31–XII-1981. C. M. Engelbrecht. The holotype (NMB 1688.7.1) and 4 paratypes (NMB 1688.7.2) will be deposited in the Acarology collection of the National Museum Bloemfontein, South Africa, and 5 paratypes (NSMT-Ac

11717–11721) in the collection of the National Science Museum, Tokyo.

Remarks. This species has two striking features which can not be missed: 1) The barbed rostral setae, 2) the more or less equal length and anterior direction of the interlamellar and exobothridial setae. Of the known *Malaconothrus* species, these characters are shared by three other species, *M. ensifer* Mahunka 1982 from Ethiopia, *M. subrasus* Balogh 1962 from Madagascar and *M. keriensis* Hammer 1966 from New Zealand. The new species can, however, be distinguished from these by the peculiar concentrations of coarse granular cerotegument in localized areas medially on the prodorsum and laterally and posteriorly on the notogaster.



Figs. 41–45. *Malaconothrus indifferens* Hammer, 1966. — 41, Prodorsum; 42, Epimerata I–IV; 43, Genital and anal plates; 44, Posterolateral part of notogaster (dorsal view); 45, Posterolateral part of notogaster (ventral view).

Malaconothrus indifferens Hammer 1966
(Figs. 39–45)

Malaconothrus indifferens Hammer 1966, p. 23, fig. 27.

Measurement (μm). Body length 444–464 (av. 451), width 218–224 (av. 221).

Color. Yellowish brown.

Prodorsum. Rostrum broadly rounded. Pedotectum I obtuse. Lamellar ridge distinct; anterior transverse ridge

situated behind rostral setae with central anterior projection. Faint ridges present between apex of lamellar ridge and insertion of lamellar seta. A distinct transverse ridge present between interlamellar setae. All prodorsal setae thin and smooth. Relative lengths and mutual distances of prodorsal setae as follows: $in > ro > le > ex$; $2 \times ro = in$; $ro > (ro-ro)$; $le < (le-le)$; $in < (in-in)$; $ex < (ex-ex)$. Integument smooth, covered by cerotegument of fine, dense granules.

Notogaster. Shield-shaped; anterior margin of notogaster almost straight; lateral margins slightly convex. All notogastral setae thin and smooth. Relative lengths and mutual distances of notogastral setae as follows: $h_2 > e_2 \doteq ps_2 > e_1 \doteq f_2 \doteq h_1 > c_3 \doteq cp \doteq d_2 \doteq h_3 > c_1 \doteq c_2 \doteq d_1 \doteq ps_1 \doteq ps_3$; $(h_1 - h_1) > (e_1 - e_1) > (c_1 - c_1) > (d_1 - d_1)$; $2.2-2.5 \times (c_2 - c_3) \doteq (c_1 - c_2)$. Two pairs of longitudinal ridges present on notogaster (ridges not equally distinct in all specimens); medial longitudinal ridge runs laterally of d_1 , e_1 to a point just anterior of the level of h_1 , where it joins the transversal arched ridge anteriorly of h_1 ; lateral longitudinal ridge runs from between c_2 and c_3 , medially of cp , laterally of d_2 , and ends free just anteriorly of f_2 ; short unpaired, curved horizontal ridge present between setae (ps_1-ps_1). Integument of notogaster smooth, covered by granular cerotegument; granules more dense on lateral and posterior parts; localized areas of even finer granular cerotegument present antero-laterally and postero-medially.

Ventral side. Anogenital chaetotaxy 4-0-1-3. Genital plate with 4 thin and smooth setae; distances between them as follows: $(g_1-g_2) < (g_2-g_3) < (g_3-g_4)$; $(g_3-g_4) \doteq 3 \times (g_1-g_2)$. Anal plate with one long seta; anal seta situated intermediate between ad_2 and ad_3 . Adanal plate with 3 setae. Setal formula of epimerata: 3-1-3-3; all epimeral setae smooth, thin and variable in length; $3b$ longest, $3c$, $4b$ and $4c$ moderately long and the remainder setae $1a$, $1b$, $1c$, $2a$, $3a$ and $4a$ minute.

Material examined. See Table 1 for collecting data.

Remarks. The South African material differs from Hammer's description in the short distance between (d_1-d_1) ;

length of h_2 (according to figure 27 (Hammer 1966) all notogastral setae are more or less the same length in *M. indifferens*) and the close proximity of ps_2 and ps_3 in the South African material (setae ps_2 and ps_3 inserted a little further apart in the New Zealand material). However, the South African specimens are so similar to *M. indifferens*, and correspond in having the same faint ridges between the apex of the lamellar ridge and insertion of lamellar seta, as well as similar cerotegument, that there is no substantial evidence for a separate species.

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Staręga = *O. hemseni* Roewer, *Egaenus rugosus* Schenkel = *Scleropilio insolens* (Simon) (ウデザトウムシ). (和訳: 編集委員会)

ヒメナミハグモ種群 (ナミハグモ科) の地理的分化および 2 新種の記載 (pp. 103-112)

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ナミハグモ科の *Cybaeus miyosii* Yaginuma 1941 ヒメナミハグモ, *C. okafujii* Yaginuma 1963 アキヨシナミハグモ, *C. kumaensis* Irie & Ono 2001 クマナミハグモ, *C. hibaensis* Ihara 1994 ヒバナミハグモの 4 既知種と, *C. kunisakiensis* クニサキヒメナミハグモ (新称), *C. tsurugi* ツルギヒメナミハグモ (新称) の 2 新種をヒメナミハグモ種群として記載した。これらの 6 種は、同一地域に生息するナミハグモ属のなかでは、小型から中型で体色の淡い種である。ヒメナミハグモ種群は、中国地方、四国、九州の西日本に分布する。それぞれの種は、種群の分布域のなかで地理的に分かれて分布している。外部形態がたいへんよく似ていることと、側所的な分布をすることから、ヒメナミハグモ種群を上種とみなすことができる。

南アフリカ共和国, レソト王国のコナダニモドキ属 (ササラダニ類: コナダニモドキ科) (pp. 113-126)

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南アフリカ共和国, レソト王国からは今日までコナダニモドキ科の報告はなく、このたびブルームフォンテイン (Bloemfontein) 南アフリカ国立博物館所蔵標本の南アフリカ共和国, レソト王国各地から採集されたコナダニモドキ属 (*Malaconothrus*) を調査し, *Malaconothrus minimus*, *Malaconothrus longidorsus*, *Malaconothrus engelbrechti*, *Malaconothrus stigmatus*

の 4 種を新種として記載し、ニュージーランドから報告されている *Malaconothrus indifferens* Hammer 1966 を南アフリカ共和国の標本を基に再記載した。 *Malaconothrus minimus* sp. nov. は Hammer (1958) がアルゼンチンから報告している *M. angulatus* に盾型の胴体部, 4 対の性扉毛をもつ点において似ているものの小型である, 桁毛が長い, 胴背毛の d_2 が胴体部の縁近くに位置している, 胴背毛の (d_1-d_1), (e_1-e_1) と (e_1-h_1) の間隔が長い, ip が胴体部の縁近くにある等の点において相違している。 *M. longidorsus* sp. nov. は Hammer (1958) がアルゼンチンから報告している *M. atuelanus* に胴体部の隆起, 4 対の性扉毛をもつ点において似ているものの, 横桁が連結していない, 非常に細かい顆粒の皮膜で覆われている, ia , ip が大きく, 逆 W 型の隆起がある点において相違しており新種とした。 *Malaconothrus engelbrechti* sp. nov. は 5 対の性扉毛, 胴体部の両側にクチクラの発達していない部分がある点で Yamamoto (1998) が中国から報告した *M. marginatus* に似ているものの, 胴体部に明瞭でないが隆起のある点, 胴背毛の h_1 が短い。第 1 脚底や桁の形状が丸まっている点において異なっている。 *M. stigmatus* sp. nov. はブラシ状の吻毛と, 同じ長さの桁間毛と桁間外毛が大きな特徴であり, これらの特徴をもつ種は, Balogh (1962) がマダガスカルから報告している *M. subrasus*, Hammer (1966) がニュージーランドから報告した *M. keriensis* と, Mahunka (1982) がエチオピアから報告している *M. ensifer* に似ているものの, 胴体部の周辺近くに小さい網目状の皮膜が数カ所ある点において異なっており新種とした。 *M. indifferens* は Hammer (1966) がニュージーランドから報告したものであるが, この度出現した種は, 胴背毛 (d_1-d_1) の間隔が短い, h_2 が長い, ps_2 と ps_3 の間隔が短い等の点において相違しているものの種を異にするほどの特徴でなく, *M. indifferens* と同定し, 再記載した。

書評 Book Reviews

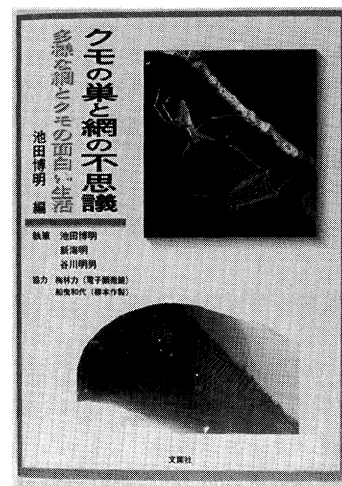
クモの巣と網の不思議. 多様な網とクモの面白い生活.

池田博明 (編) 池田博明・新海 明・谷川明男 (共著) (2003) 文芸社 (東京) 183 pp.

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最近, 比較的マイナーな分類群であるクモ類の本が続々と出版されている。なぜだろうか。社会的な追い風が吹いているとは思えない。たぶん国内外を問わず, クモ研究のレベルが以前よりも上がってきていて, さまざまな知見を世に出す時期に来ているからだと思う。この本を読めば, その一端を垣間見ることができるに違いない。

この本の位置づけ, あるいは特色について考えてみよう。著者らも巻末で述べているように, 本書は 10 年以上前に出版された「クモのはなし」(梅谷, 加藤編) と内容的にかなり近い。



内容は大幅にバージョンアップされているが, 意外に知られていなかったクモの習性や, 最近の面白いトピックを中心に話が構成されている点が類似している。個々の話題を読んでみると, 著者によって観点が違っているのがわかる。池田氏と谷川氏は基本的に解説調であり, 新海氏は謎解き調である。解説調の話では, クモの生態や網の性質全